



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/649,692	08/28/2000	Tyler E. Pease	141.009	8406

7590 12/24/2002

Andrew J Nilles  
Nilles & Nilles SC  
Firstar Center Suite 2000  
777 East Wisconsin Avenue  
Milwaukee, WI 53202-5345

EXAMINER

HORTON, YVONNE MICHELE

ART UNIT

PAPER NUMBER

3635

DATE MAILED: 12/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

*"Supplemental"*  
**Office Action Summary**

Application No.  
**09/649,692**

Applicant(s)  
**TYLER E. PEASE**

Examiner  
**YVONNE M. HORTON**

Art Unit  
**3635**



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 2/13/02 AND 6/10/02.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on Feb 13, 2002 is/are a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 6) ☐ Other:

Art Unit: 3635

## **DETAILED ACTION**

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-33 are provisionally rejected under the judicially created doctrine of double patenting over claims 1-20 of copending Application No. 09/704,137. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application

since the referenced copending application and the instant application are claiming common subject matter, as follows:

an insulated wall panel including a foam sheet having first and second planar sides and grooves, first and second reinforcing strips received in respective grooves, and first and second reinforcing layers ; wherein the strips are mechanically altered.

Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other copending application.

***Claim Rejections - 35 USC § 102***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1,2,21,22,24,25 and 27 stand rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent #5,638,651 to FORD. FORD discloses an insulated wall panel (10) including a foam sheet (15) having first (FE) and second (SE) planar sides and grooves (26), first and second reinforcing strips (24) have portions (IP) disposed inwardly from the first (FE) and second edges (SE) and received within respective grooves (26), and first and second reinforcing layers (12). Regarding claim 2, FORD also discloses two downwardly extending flanges (F), see the marked-up attachment. Regarding claims 21 and 25, the strip (24 ) is “configured” at the web portion of the strip (24) which serves as the recessed portion to receive fasteners, column 3, lines 59-61. In reference to claim 22 and 27, the fasteners are received in openings (28). In reference to claim 24, the heads of the fasteners (unlabeled) would rest against the web/recessed portion of the reinforcing strips (24) and the shank portion (also unlabeled) would extend therethrough.

Claims 1 and 30-33 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent #6,408,594 to PORTER. PORTER discloses an insulated wall panel (10) including a foam sheet (16) having first (FE) and second (SE) planar sides and grooves (26), first and second reinforcing strips (24) have portions (IP) disposed inwardly from the first (FE) and second edges (SE) and received within respective grooves (26), and first and second reinforcing layers (12).

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1 and 28-33 are rejected under 35 U.S.C. 102(b) as being obvious over U.S. Patent #6,408,594 to PORTER. PORTER discloses an insulated wall panel (10) including a foam sheet (16) having first (FE) and second (SE) planar sides, first and second reinforcing strips (18a,b; 20a,b; 22a,b) disposed inwardly from the first (FE) and second edges (SE), and first and second reinforcing layers (12,14). PORTER discloses the basic claimed structure except for the use of grooves to receive the reinforcing strips and except for explicitly stating how far the reinforcing members are disposed in from the edges of the foam sheet. In regards to the grooves, although PORTER does not disclose the use of grooves, grooves are old and very well known in the art to aid in placing, receiving and securing members. Thus, it would have been obvious to provide the structure of PORETER with grooves in order to simply accommodating the reinforcing members. In regards to claim 28, PORTER discloses a wall (100) wherein the reinforcing strips (114,118) are placed at the ends of the foam panel and there are no reinforcing strips on the opposing longitudinal sides. In reference to claims 29-32, PORTER does not explicitly disclose how far he positions his reinforcing members from the edges of the foam panels; and the applicant has shown no criticality for any one particular dimension for placing

the reinforcing members. Thus, it would have been an obvious matter of design choice to select a certain dimension according to the intended use of the article. For instance, if the panel were to be used in environments requiring less load and applied stresses, the dimensions for placing the reinforcing members might be closer to the ends and vice-versa. In reference to claim 33, PORTER discloses a first and second layers (12,14) that are paper, column 3, lines 1-16.

Claims 6-8 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent #5,638,651 to FORD. FORD discloses the basic claimed panel except for explicitly disclosing bonding the reinforcing layer to define a vapor barrier and the tensile strength of the reinforcing layers. Although FORD is silent with respect to forming a vapor barrier, it is obvious from the materials used in FORD (i.e. foam and steel) that the steel material offer a vapor barrier to the porous form material. Regarding the strength of the reinforcing layer, FORD, col 3 line 49 requires a high tensile strength material. The selection of a known material on the basis of its suitability for the use intended is an obvious matter of design choice.

Claims 11,12 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent #5,638,651 to FORD. The structure of FORD inherently discloses the method of manufacturing an insulated panel including the steps of creating a foam block (15); cutting the block; inserting reinforcing strips (24), covering the strips (24) with a reinforcing layer (12); and bonding the first reinforcing layer (12) to the foam sheets (15). And regarding claim 12, bonding a second reinforcing layer (12). FORD discloses the basic claimed structure except for mechanically texturing the strips. Texturing metal and plastic members prior to insertion of securing devices and prior to application of adhesives and other similar materials is old and very well known in the art. Thus, it would have been obvious to one having ordinary skill in the art to

texture the strips of FORD in order to prevent the securing devices from slipping while being inserted.

Claims 14 and 15 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent #5,638,651 to FORD. FORD discloses the basic claimed method except for the steps of applying adhesive and rolling the reinforcing layers. Although FORD does not disclose the use of and adhesive, it would have been obvious to one having ordinary skill in the art to provide the panel of FORD with adhesive in order to provide the panel and its exterior face with additional reinforcement in ensuring the facings are maintained properly against the foam sheet.

***Allowable Subject Matter***

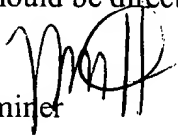
Claim 23 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 3-6,10 and 13 are allowed.

Claims 16-20 remain as being allowable.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yvonne M. Horton whose telephone number is (703) 308-1909.

Y. Horton  
Patent Examiner





US005638651A

# United States Patent [19] Ford

[11] Patent Number: 5,638,651  
[45] Date of Patent: Jun. 17, 1997

## [54] INTERLOCKING PANEL BUILDING SYSTEM

[76] Inventor: Vern M. Ford, 6287 N. 25 E., Idaho Falls, Id. 83401

[21] Appl. No.: 668,238

[22] Filed: Jun. 21, 1996

### Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 295,598, Aug. 25, 1994, abandoned.

[51] Int. Cl.<sup>6</sup> ..... E04C 2/30; E04C 2/292

[52] U.S. Cl. .... 52/309.7; 52/90.1; 52/265; 52/269; 52/271; 52/284; 52/293.3; 52/277; 52/309.9; 52/794.1; 52/800.12

[58] Field of Search ..... 52/90.1, 92.1, 52/93.2, 262, 264, 265, 267, 269, 271, 274, 284, 293.3, 309.7, 309.9, 309.11, 309.16, 592.1, 592.3, 656.4, 794.1, 800.1, 800.11, 800.12, 801.1, 802.1, 276, 277, 279

### [56] References Cited

#### U.S. PATENT DOCUMENTS

2,175,579 10/1939 Stratton ..... 52/592.1  
3,462,897 8/1969 Weinrott ..... 52/265 X  
3,665,662 5/1972 Timbrook et al. .... 52/262

3,719,016 3/1973 Randolph ..... 52/265 X  
3,874,983 4/1975 Hay, II et al. .... 52/309.9 X  
4,057,948 11/1977 Wise ..... 52/265 X  
4,163,349 8/1979 Smith .  
4,283,898 8/1981 Claver ..... 52/584.1  
4,628,650 12/1986 Parker ..... 52/265  
4,633,634 1/1987 Nemmer et al. .... 52/474  
4,712,352 12/1987 Low ..... 52/794.1  
4,720,948 1/1988 Henley et al. .  
5,245,809 9/1993 Harrington ..... 52/309.11  
5,265,389 11/1993 Mazzone et al. .... 52/309.7  
5,269,109 12/1993 Gulur ..... 52/309.9  
5,373,678 12/1994 Hesser ..... 52/309.9 X  
5,497,589 3/1996 Porter ..... 52/592.1 X  
5,524,400 6/1996 Schmechel ..... 52/309.7 X

Primary Examiner—Carl D. Friedman

Assistant Examiner—Kevin D. Wilkens

Attorney, Agent, or Firm—Hopkins Roden Crockett Hansen & Hoopes, PLLC

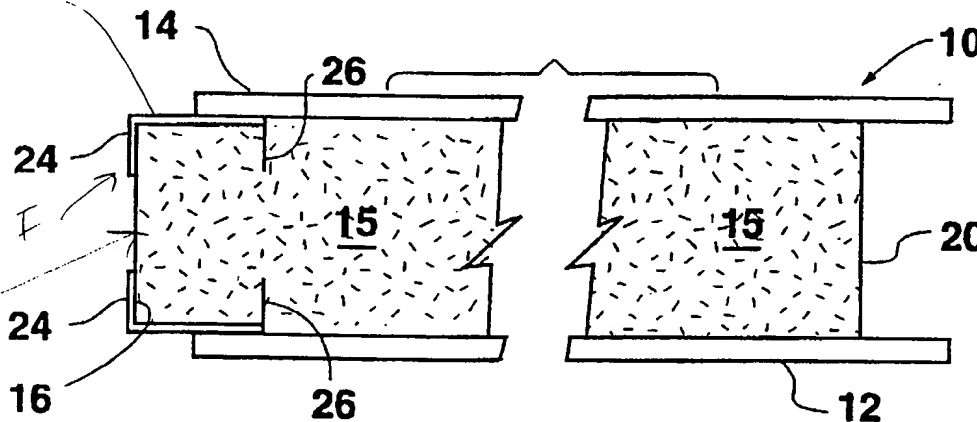
[57]

### ABSTRACT

This invention discloses to an interlocking insulated panel building system that has expanded polystyrene panels sandwiched between inner and outer oriented strand board (OSB) skins. Structural strength is enhanced and thermal shorts are reduced by use of channels formed from typically 22 gauge (0.03") galvanized steel. The panels are interfitted by a tongue-and-groove system. The components of the system are wall panels, headers, sills, beams, and roof panels.

15 Claims, 8 Drawing Sheets

IP







US006408594B1

(12) **United States Patent**  
**Porter**(10) Patent No.: **US 6,408,594 B1**  
(45) Date of Patent: **Jun. 25, 2002**(54) **REINFORCED STRUCTURAL INSULATED  
PANELS WITH PLASTIC IMPREGNATED  
PAPER FACINGS**(76) Inventor: **William H. Porter, P.O. Box 249,  
Saugatuck, MI (US) 49453**(\*) Notice: Subject to any disclaimer, the term of this  
patent is extended or adjusted under 35  
U.S.C. 154(b) by 0 days.

4,712,352 A	*	12/1987	Low	52/809
4,726,973 A		2/1988	Thompson	
4,765,105 A		8/1988	Tissington et al.	
4,786,547 A		11/1988	St-Michel	
4,856,244 A		8/1989	Clapp	
4,865,912 A		9/1989	Mitsumata	
4,932,171 A		6/1990	Beattie	
5,058,333 A		10/1991	Schwartz	
5,062,250 A		11/1991	Buzzella	

(List continued on next page.)

(21) Appl. No.: **09/334,233**(22) Filed: **Jun. 16, 1999**(51) Int. Cl.<sup>7</sup> ..... **E04C 2/34**(52) U.S. Cl. .... **52/794.1; 52/220.1; 52/268;  
52/270; 52/309.7; 52/309.11; 52/586.1**(58) Field of Search ..... **52/236.7, 262,  
52/265, 267, 268, 269, 270, 275-279, 437-439,  
309.7, 309.11, 309.14, 309.16, 574, 586.1,  
590.2, 592.2, 220.1, 20.3**(56) **References Cited****U.S. PATENT DOCUMENTS**

919,057 A	4/1909	Moore
1,250,594 A	12/1917	Knapp
2,111,922 A	3/1938	Borkenstein
2,875,478 A	3/1959	Andre
3,557,840 A	1/1971	Maybee
3,654,053 A	4/1972	Toedter
3,731,449 A	5/1973	Kephart, Jr.
3,911,554 A	10/1975	Ford
4,024,684 A	5/1977	Holmgren
4,037,377 A	7/1977	Howell et al.
4,051,641 A	10/1977	Elliott
4,068,437 A	1/1978	Byxbe et al.
4,147,004 A	4/1979	Day et al.
4,169,688 A	10/1979	Toshio
4,170,859 A	10/1979	Counihan
4,402,170 A	9/1983	Seidner
4,430,833 A	2/1984	Balzer et al.
4,443,988 A	4/1984	Coutu, Sr.
4,471,591 A	9/1984	Jamison
4,671,038 A	6/1987	Porter
4,704,837 A	11/1987	Menchetti et al.

Primary Examiner—Carl D. Friedman

Assistant Examiner—Yvonne M. Horton

(74) Attorney, Agent, or Firm—Emrich &amp; Dithmar

(57) **ABSTRACT**

A structural insulated panel for building construction includes a planar, rigid insulating core such as of lightweight plastic foam having opposed surfaces to which are bonded respective plastic impregnated paper (PIP) sheets. Disposed symmetrically either on the inner surfaces of the PIP sheets, and thus within the panel's insulating foam core, or on the outer surfaces of the PIP sheets are spaced reinforcing strips. The reinforcing strips may be flat or formed, such as in the shape of a channel, may be of metal, gypsum composites, or wood, and are provided with an adhesive coating for bonding to the insulating foam core and a PIP sheet. The spaced metal strips increase the panel's bending strength and serve as an attachment base for internal and external finished faces, while the PIP sheets provide the panel with high tensile strength. The adhesive coating on the metal reinforcing strips further increases panel strength. The metal strips may also be provided with an outer gypsum coating to protect the metal strip from heat and/or fire. The panels may be used in walls, roofs or floors. When used in a wall, top and bottom U-shaped metal channels may be respectively positioned on upper and lower edges of the panel and attached to respective upper and lower edges of the reinforcing strips within the panel by conventional means such as screws. Adjacent panels may be joined by metal strips attached such as by screws or clips to the panels' top and bottom edge channels.

**39 Claims, 5 Drawing Sheets**